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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 834,309	04 11 2001	Xiaojiang Chen	2848-43	3032

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SHERIDAN ROSS PC
1560 BROADWAY
SUITE 1200
DENVER, CO 80202

EXAMINER

ZHOU, SHUBO

ART UNIT	PAPER NUMBER
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1631

DATE MAILED: 05 30 2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/834,309

Applicant(s)

CHEN

Examiner

Shubo "Joe" Zhou

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 8-15, 17-23 and 25-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 16 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 8/18/02 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Applicant's amendment and request for reconsideration in Paper #14, filed on 3/17/03, is acknowledged and the amendments entered.

Currently, claims 1-27 are pending, but only claims 1-7, 16, and 24 are under consideration.

Applicant's arguments in response to the previous Office Action, have been fully considered but they are not deemed to be persuasive. Rejections and/or objections not reiterated from previous Office action are hereby withdrawn. The following rejections and/or objections are either reiterated from the previous Office action(s) or newly added, and constitute the complete set presently being applied to the instant application.

This application contains claims 8-15, 17-23, and 25-27 drawn to an invention nonelected with traverse in Paper No. 11, filed 9/13/02. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144). See MPEP § 821.01.

Drawings

Formal drawings filed 9/18/02 are acknowledge and accepted by the examiner.

It is noted that at least one color photographs and/or color drawing has been found in the instant application. Applicant is advised that color photographs and color drawings are acceptable only for examination purposes unless a petition filed under 37 CFR 1.84(a)(2) or (b)(2) is granted permitting their use as formal drawings. In the event applicant wishes to use the drawings currently on file as formal drawings, a petition must be filed for acceptance of the photographs or color drawings as formal drawings. Any such petition must be accompanied by

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the appropriate fee as set forth in 37 CFR 1.17(i), three sets of drawings or photographs, as appropriate, and an amendment to the first paragraph of the brief description of the drawings section of the specification which states:

The file of this patent contains at least one drawing executed in color. Copies of this patent with color drawing(s) will be provided by the Patent and Trademark Office upon request and payment of the necessary fee.

Color photographs will be accepted if the conditions for accepting color drawings have been satisfied.

Claim Rejections-35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-7, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mond et al. (US patent No. 6,432,679, date of patent: Aug. 13, 2002, date of filing: Jun. 10, 1999) in view of Prodinger et al. (IDS document : J. Immunol. Vol. 161 : 4604-4610, 1998), and further in view of Hampton Research.

This rejection is reiterated from the previous Office action and maintained for reasons of record. Applicants argue that the references do not teach or suggest all the elements of the invention, i.e. the structure of the CR2-SCR1-2 region defined by the atomic coordinates of a CR2-SCR1-2 crystal, and especially, Prodinger et al. teach an incorrect model. Thus, the 103 rejection is improper. This is not found persuasive for the following reasons. As set forth in the previous Office action, Mond et al. disclose vaccine adjuvants that bind to the CR2 complex containing EBV Gp350/220, which is known to bind to CR2. In addition, Mond et al. disclose a method for identifying Gp350/220 analogs that may bind to CR2 and inhibit its binding to CR2's natural ligands using rational drug design. The method comprises "the steps of determining the three-dimensional structure of that portion of the CR2 polypeptide which binds to Gp350/220, analyzing the three-dimensional structure for likely binding site of Gp350/220 or the C3b peptide, synthesizing a molecule that is predicted to bind to a predicative site, and determining the binding and adjuvanting activity of the molecule". See column 7, lines 20-29. Prodinger et al. characterize an monoclonal antibody that binds to CR2 and interferes the binding of CR2 to its ligand, C3dg, and determine that C3dg binds to CR2-SCR1-2, underscoring the importance of the region in ligand binding. See page 4604. One of ordinary skill in the art would have been motivated by Prodinger et al. to crystallize CR2-SCR 1-2 region for identifying compounds that would inhibit the binding of CR2 to its ligands because Prodinger et al. clearly shows the SCR1-2 region of CR2 is critical in ligand binding. That Prodinger et al. may have disclosed an incorrect model, as alleged by applicants, does not vitiate the fact that Prodinger et al. disclose the importance of the SCR1-2 region of CR2 in ligand binding.

As to the structure of CR2-SCR 1-2 defined by the atomic coordinates of its crystals, as set forth in the previous Office action, Hampton Research provided a crystal screening kit, Crystal Screen, for crystallizing proteins, etc. The Crystal Kit is a complete reagent kit designed to provide a rapid screening method for the crystallization of biological macromolecules and it provides a detailed procedure and all the reagents needed. At least 107 macromolecules have been crystallized with the assistance of Crystal Screen including human IFN-gamma receptor, as disclosed by Hampton Research's 2002 Catalog. This provides evidence for the general applicability of the kit for the crystallization of a variety of different proteins. The crystal of the SCR1-2 region of CR2 would have been obvious to one of ordinary skill in the art given the motivation by Prodinger et al. and the routine procedure provided by Hampton Research. Applicants fail to point out any secondary considerations as to why the kit of Hampton Research does not provide routine procedure for the crystallization of the SCR1-2 region of CR2.

Claims 1-7, 16 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mohammadi et al. (WO 98/07835, 2/26/1998)

This rejection is reiterated from the previous Office action and maintained for reasons of records. Applicants argue that the 103 rejection is improper because the Mohammadi et al. reference does not teach or suggest the atomic coordinates of the CR2-SCR1-2 crystal. This is not deemed persuasive because as set forth in the previous Office action, the difference between the claimed invention and the pertinent portion of the reference is the atomic coordinates, which is deemed non-functional descriptive material because the content of the structure coordinates of a protein or protein complex does not alter how the computational method functions, i.e., the structural coordinates of the protein does not limit the claimed method to perform different steps than the method of Mohammadi et al. Such Nonfunctional descriptive material cannot render nonobvious an invention that would have otherwise been obvious. Cf. In re Gulack, 703 F.2d

1381, 1385, 217 USPQ 401, 404 (Fed. Cir. 1983) (when descriptive material is not functionally related to the substrate, the descriptive material will not distinguish the invention from the prior art in terms of patentability).

Conclusion

No claim is allowed.

THIS ACTION IS MADE FINAL.

Applicants are reminded of the extension of time policy as set forth in 37 C.F.R. §1.136 (a). A shortened statutory period for response to this final action is set to expire three months from the date of this action. In the event a first response is filed within two months of the mailing date of this final action and the advisory action is not mailed until after the end of the three-month shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 C.F.R. §1.136 (a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than six months from the mailing date of this final action.

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993)(See 37 CFR § 1.6(d)). The CM1 Fax Center number is either (703) 308-4242 or (703)305-3014.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to:
Shubo "Joe" Zhou, Ph.D., whose telephone number is (703) 605-1158. The examiner can normally be reached on Monday-Friday from 8 A.M. to 4 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward, Ph.D., can be reached on (703) 308-4028.

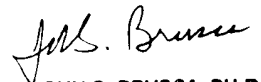
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Any inquiry of a general nature or relating to the status of this application should be directed to Patent Analyst Tina Plunkett whose telephone number is (703)-305-3524, or to the Technical Center receptionist whose telephone number is (703) 308-0196.



S. "Joe" Zhou, Ph.D.

Patent Examiner



JOHN S. BRUSCA, PH.D
PRIMARY EXAMINER